

# New Lighting Landscape in India

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## Abstract

The lighting industry has kept up with these demands and aspirations by continuously introducing new and more efficient technologies, by changing and improving lighting design and creating a more effective total system approach. Lighting has progressed over the last century from Edison's light source to today's energy efficient, task oriented economic proposition. The Lighting Industry has further initiated to reduce energy consumption for lighting from present 18% of total power consumption to 13% by year 2020 by introducing more energy efficient products and working with government to execute various schemes and awareness programs to achieve this. The industry has been proactive and has always ensured production of all products in India. This tradition will continue for LED lighting products as well. The future promises even more involvement and contributions from lighting and 'Vision 2020' proposes to project what the Indian Industry visualizes for lighting by the end of this momentous decade.

**Key Words:** LEDs, UJJALA, SLNP

## 1. INTRODUCTION

The lighting industry in India accounts for around 20 per cent of the total energy consumption. Driven by the climate change targets as ratified by India at COP21, the government has introduced multiple policies and programmes to create a robust energy-efficient lighting environment the government initiative to replace all conventional lights including the highly inefficient incandescent bulbs with smart and energy efficient LEDs under the Unnat Jyoti by Affordable LEDs for All (UJALA) programme is an example of how the lighting market is witnessing a transformation.

## 2. UJALA

The UJALA programme was introduced in January 2015 to initiate the replacement of existing bulbs with LEDs it aimed at replacing nearly 770 million incandescent bulbs and has been catapulted into a countrywide energy efficiency movement the scheme has a dual objective :to produce LED bulb at lower prices as compared to market prices and to distribute them to domestic consumers to this end energy efficiency service limited(EESL), the super energy services company promoted by the government, has evolved a business model whereunder it carries out large-scale procurement of LED bulbs from private manufacturers through competitive bidding and sells them through distribution centres at rates well below market prices consumers can pay for these bulbs either through on bill-financing model (partly upfront and then in installments) or pay the entire amount at one go.

The cost of LEDs in various rounds of procurement by EESL has seen a significant reduction from Rs 310 per bulb in January 2014 to Rs 38 per bulb in the latest round of bidding in September 2016 Further the market growth has been phenomenal in 2014-2015 only 3 million LED bulbs were distributed while in 2015-2016 this figure crossed 150 million with almost 90 million of them distributed under UJALA alone as of December 2016 more than 180 million LEDs have been distributed across 22 states apart from the two primary objectives UJALA is aimed at reducing the peak demand of DISCOMS the programme has helped shave off about 4703 MW from the load on the grid (as of December 9, 2016) these initiatives result in energy savings of 23 million kWh per year translating into savings of Rs 93 billion per year and a reduction of 19.2 million tonnes of CO<sub>2</sub> per year

with the replacement of 770 million bulbs the total reduction in the country's connected load is estimated to be 20,000 MW translating into energy savings of 100 billion kWh every year the total saving in the electricity bills of consumers would be nearly Rs 400 billion per year considering an average tariff of Rs 4 kWh various state-specific taxes and other administrative costs like distribution are added to the pooled procurement price as a result there is a variation in the final costs of bulbs across states which is typically in the range of Rs 75-95 per bulb.

### 3. SLNP

a key component of UJALA is the street light national programme (SLNP) the government has undertaken the task of replacing 35 million street lights with energy efficient LEDs by 2019 under the SLNP with patchy implementation of street lighting systems in rural areas and the prevalence of inefficient systems in urban areas there is a need for a complete overhaul of street lights the SLNP aims at reducing the electricity demand of street lights by more than half from 3400 MW at present to 1400 MW translating into a cost benefit of Rs 55 billion per year.

under the SLNP the cost of replacing street light is borne upfront by EESL repayable by the urban local bodies (ULBs) over a period of five to seven years as a decision on 9, 2016, nearly 1.5 million street lights have been replaced with energy efficient LEDs in 20 states resulting in energy saving of up to 489.7 MWh or 44.52 MW in avoided demand per day this programme has so far been implemented in six ULBs and work is under way in another 88 out of the total 302 ULBs given the right impetus the SLNP will be able to further penetrate into rural areas which not only need energy efficient systems but also street lights

### 4. CONCLUSION

The impact of UJALA on the lighting market has been significant according to the electrical lamp and component manufacturers association the LED market has grown by 579 per cent from 2010 to 2014 and currently stands at Rs 33.95 billion it is expected to reach at least

Rs 50 billion by 2016-2017 further India's share in the global LED market has increased from 0.1 per cent to 10 per cent in the market.

In sum, market aggregation, efficient procurement methodologies and low procurement costs under UJALA have helped consumers overcome the price barrier and monetise energy savings and attract investments.

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